BioMap and Living Waters

Guiding Land Conservation for Biodiversity in Massachusetts

Core Habitats of Amherst

This report and associated map provide information about important sites for biodiversity conservation in your area.

This information is intended for conservation planning, and is not intended for use in state regulations.

Produced by:

Natural Heritage & Endangered Species Program
Massachusetts Division of Fisheries and Wildlife
Executive Office of Environmental Affairs
Commonwealth of Massachusetts

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* Depending on the location of Core Habitats, your city or town may not have all of these sections.

Spring Salamander
(Gyrinophilus porphyriticus)
Species of Special Concern

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For more information on rare species and natural communities, please see our fact sheets online at ***www.nhesp.org***

BioMap and Living Waters:
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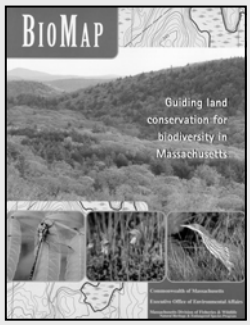
Introduction

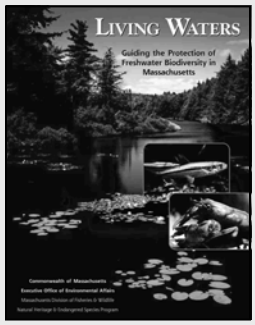
In this report, the Natural Heritage & Endangered Species Program provides you with site-specific biodiversity information for your area. Protecting our biodiversity today will help ensure the full variety of species and natural communities that comprise our native flora and fauna will persist for generatons to come.

The information in this report is the result of two statewide biodiversity conservation planning projects, ***BioMap*** and ***Living Waters***. The goal of the BioMap project, completed in 2001, was to identify and delineate the most important areas for the long-term viability of terrestrial, wetland, and estuarine elements of biodiversity in Massachusetts. The goal of the Living Waters project, completed in 2003, was to identify and delineate the rivers, streams, lakes, and ponds that are important for freshwater biodiversity in the Commonwealth. These two conservation plans are based on documented observations of rare species, natural communities, and exemplary habitats.

What is a Core Habitat?

Both BioMap and Living Waters delineate ***Core Habitats*** that identify the most critical sites for biodiversity conservation across the state. Core Habitats represent habitat for the state's most viable rare plant and animal populations and include exemplary natural communities and aquatic habitats. Core Habitats represent a wide diversity of rare species and natural communities (see Table 1), and these areas are also thought to contain virtually all of the other described species in Massachusetts. Statewide, BioMap Core Habitats encompass 1,380,000 acres of uplands and wetlands, and Living Waters identifies 429 Core Habitats in rivers, streams, lakes, and ponds.





Get your copy of the ***BioMap*** and ***Living Waters*** reports! Contact Natural Heritage at 508-792-7270, Ext. 200 or email natural.heritage@state.ma.us. Posters and detailed technical reports are also available.

Core Habitats and Land Conservation

One of the most effective ways to protect biodiversity for future generations is to protect Core Habitats from adverse human impacts through land conservation. For Living Waters Core Habitats, protection efforts should focus on the ***riparian areas***, the areas of land adjacent to water bodies. A naturally vegetated buffer that extends 330 feet (100 meters) from the water's edge helps to maintain cooler water temperature and to maintain the nutrients, energy, and natural flow of water needed by freshwater species.

In Support of Core Habitats

To further ensure the protection of Core Habitats and Massachusetts' biodiversity in the long-term, the BioMap and Living Waters projects identify two additional areas that help support Core Habitats.

In BioMap, areas shown as ***Supporting Natural Landscape*** provide buffers around the Core Habitats, connectivity between Core Habitats, sufficient space for ecosystems to function, and contiguous undeveloped habitat for common species. Supporting Natural Landscape was

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generated using a Geographic Information Systems (GIS) model, and its exact boundaries are less important than the general areas that it identifies. Supporting Natural Landscape represents potential land protection priorities once Core Habitat protection has been addressed.

In Living Waters, ***Critical Supporting Watersheds*** highlight the immediate portion of the watershed that sustains, or possibly degrades, each freshwater Core Habitat. These areas were also identified using a GIS model. Critical Supporting Watersheds represent developed and undeveloped lands, and can be quite large. Critical Supporting Watersheds can be helpful in land-use planning, and while they are not shown on these maps, they can be viewed in the Living Waters report or downloaded from www.mass.gov/mgis.

Understanding Core Habitat Species, Community, and Habitat Lists

What's in the List?

Included in this report is a list of the species, natural communities, and/or aquatic habitats for each Core Habitat in your city or town. The lists are organized by Core Habitat number.

For the larger Core Habitats that span more than one town, the species and community lists refer to the entire Core Habitat, not just the portion that falls within your city or town. For a list of all the state-listed rare species within your city or town's boundary, whether or not they are in Core Habitat, please see the town rare species lists available at www.nhesp.org.

The list of species and communities within a Core Habitat contains only the species and natural communities that were explicitly included in a given BioMap or Living Waters Core Habitat. Other rare species or examples of other natural communities may fall within the Core Habitat, but for various reasons are not included in the list. For instance, there are a few rare species that are omitted from the list or summary because of their particular sensitivity to the threat of collection. Likewise, the content of many very small Core Habitats are not described in this report or list, often because they contain a single location of a rare plant

Table 1. The number of rare species and types of natural communities explicitly included in the BioMap and Living Waters conservation plans, relative to the total number of native species statewide.

BioMap

	Species and Verified Natural Community Types	
Biodiversity Group	**Included in BioMap**	**Total Statewide**
Vascular Plants	246	1,538
Birds	21	221 breeding species
Reptiles	11	25
Amphibians	6	21
Mammals	4	85
Moths and Butterflies	52	An estimated 2,500 to 3,000
Damselflies and Dragonflies	25	An estimated 165
Beetles	10	An estimated 2,500 to 4,000
Natural Communities	92	> 105 community types

Living Waters

	Species	
Biodiversity Group	**Included in Living Waters**	**Total Statewide**
Aquatic Vascular Plants	23	114
Fishes	11	57
Mussels	7	12
Aquatic Invertebrates	23	An estimated > 2500

species. Some Core Habitats were created for suites of common species, such as forest birds, which are particularly threatened by habitat fragmentation. In these cases, the individual common species are not listed.

What does 'Status' mean?

The Division of Fisheries and Wildlife determines a status category for each rare species listed under the Massachusetts Endangered Species Act, M.G.L. c.131A, and its implementing regulations, 321 CMR 10.00. Rare species are categorized as Endangered, Threatened, or of Special Concern according to the following:

- ***Endangered*** species are in danger of extinction throughout all or a significant portion of their range or are in danger of extirpation from Massachusetts.
- ***Threatened*** species are likely to become Endangered in Massachusetts in the foreseeable future throughout all or a significant portion of their range.
- ***Special Concern*** species have suffered a decline that could threaten the species if allowed to continue unchecked or occur in such small numbers or with such restricted distribution or specialized habitat requirements that they could easily become Threatened in Massachusetts.

In addition, the Natural Heritage & Endangered Species Program maintains an unofficial ***watch list*** of plants that are tracked due to potential conservation interest or concern, but are not regulated under the Massachusetts Endangered Species Act or other laws or regulations. Likewise, described natural communities are not regulated any laws or regulations, but they can help to identify ecologically important areas that are worthy of protection. The status of natural communities reflects the documented number and acreages of each community type in the state:

- ***Critically Imperiled*** communities typically have 5 or fewer documented sites or have very few remaining acres in the state.
- ***Imperiled*** communities typically have 6-20 sites or few remaining acres in the state.
- ***Vulnerable*** communities typically have 21-100 sites or limited acreage across the state.
- ***Secure*** communities typically have over 100 sites or abundant acreage across the state; however excellent examples are identified as Core Habitat to ensure continued protection.

Legal Protection of Biodiversity

BioMap and Living Waters present a powerful vision of what Massachusetts would look like with full protection of the land that supports most of our biodiversity. To create this vision, some populations of state-listed rare species were deemed more likely to survive over the long-term than others.

Regardless of their potential viability, all sites of state-listed species have full legal protection under the Massachusetts Endangered Species Act (M.G.L. c.131A) and its implementing regulations (321 CMR 10.00). Habitat of state-listed wildlife is also protected under the Wetlands Protection Act Regulations (310 CMR 10.37 and 10.59). The ***Massachusetts Natural Heritage Atlas*** shows **Priority Habitats**, which are used for regulation under the Massachusetts Endangered Species Act and Massachusetts Environmental Policy Act (M.G.L. c.30) and **Estimated Habitats**, which are used for regulation of rare wildlife habitat under the Wetlands Protection Act. For more information on rare species regulations, see the *Massachusetts Natural Heritage Atlas*, available from the Natural Heritage & Endangered Species Program in book and CD formats.

BioMap and Living Waters are conservation planning tools and do not, in any way, supplant the Estimated and Priority Habitat Maps which have regulatory significance. Unless and until the combined BioMap and Living Waters vision is fully realized, we must continue to protect all populations of our state-listed species and their habitats through environmental regulation.

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Understanding Core Habitat Summaries

Following the BioMap and Living Waters Core Habitat species and community lists, there is a descriptive summary of each Core Habitat that occurs in your city or town. This summary highlights some of the outstanding characteristics of each Core Habitat, and will help you learn more about your city or town's biodiversity. You can find out more information about many of these species and natural communities by looking at specific ***fact sheets*** at www.nhesp.org.

Next Steps

BioMap and Living Waters were created in part to help cities and towns prioritize their land protection efforts. While there are many reasons to conserve land – drinking water protection, recreation, agriculture, aesthetics, and others – BioMap and Living Waters Core Habitats are especially helpful to municipalities seeking to protect the rare species, natural communities, and overall biodiversity within their boundaries. Please use this report and map along with the rare species and community fact sheets to appreciate and understand the biological treasures in your city or town.

Protecting Larger Core Habitats

Core Habitats vary considerably in size. For example, the average BioMap Core Habitat is 800 acres, but Core Habitats can range from less than 10 acres to greater than 100,000 acres. These larger areas reflect the amount of land needed by some animal species for breeding, feeding, nesting, overwintering, and long-term survival. Protecting areas of this size can be very challenging, and requires developing partnerships with neighboring towns.

Prioritizing the protection of certain areas within larger Core Habitats can be accomplished through further consultation with Natural Heritage Program biologists, and through additional field research to identify the most important areas of the Core Habitat.

Additional Information

If you have any questions about this report, or if you need help protecting land for biodiversity in your community, the Natural Heritage & Endangered Species Program staff looks forward to working with you.

Contact the Natural Heritage & Endangered Species Program:

by Phone *508-792-7270, Ext. 200*

by Fax: *508-792-7821*

by Email: *natural.heritage@state.ma.us*.

by Mail: *North Drive*
Westborough, MA 01581

The GIS datalayers of BioMap and Living Waters Core Habitats are available for download from MassGIS: www.mass.gov/mgis

Check out www.nhesp.org for information on:

- Rare species in your town
- Rare species fact sheets
- BioMap and Living Waters projects
- Natural Heritage publications, including:
  - Field guides
  - Natural Heritage Atlas, and more!

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BioMap: Species and Natural Communities

Amherst

Core Habitat BM659

Natural Communities

Common Name	Scientific Name	Status
Black Gum-Pin Oak-Swamp White Oak "Perched" Swamp		Imperiled

Vertebrates

Common Name	Scientific Name	Status
Eastern Spadefoot	*Scaphiopus holbrookii*	Threatened

Core Habitat BM727

Plants

Common Name	Scientific Name	Status
Small Site for Rare Plant		

Core Habitat BM732

Plants

Common Name	Scientific Name	Status
Small Site for Rare Plant		

Core Habitat BM740

Natural Communities

Common Name	Scientific Name	Status
Black Gum-Pin Oak-Swamp White Oak "Perched" Swamp		Imperiled
High-Terrace Floodplain Forest		Imperiled
Low-Energy Riverbank		Secure
Major-River Floodplain Forest		Imperiled

Plants

Common Name	Scientific Name	Status
Adder's-Tongue Fern	*Ophioglossum pusillum*	Threatened

Climbing Fern	*Lygodium palmatum*	Special Concern
Green Dragon	*Arisaema dracontium*	Threatened
Narrow-Leaved Spring Beauty	*Claytonia virginica*	Endangered
Sandbar Willow	*Salix exigua*	Threatened

Invertebrates

Common Name	Scientific Name	Status
Arrow Clubtail	*Stylurus spiniceps*	Threatened
Brook Snaketail	*Ophiogomphus aspersus*	Special Concern
Riverine Clubtail	*Stylurus amnicola*	Endangered
Sensitive Rare Invertebrate		
Zebra Clubtail	*Stylurus scudderi*	Endangered

Vertebrates

Common Name	Scientific Name	Status
Bald Eagle	*Haliaeetus leucocephalus*	Endangered
Four-toed Salamander	*Hemidactylium scutatum*	Special Concern
Spotted Turtle	*Clemmys guttata*	Special Concern
Wood Turtle	*Clemmys insculpta*	Special Concern

Core Habitat BM742

Plants

Common Name	Scientific Name	Status
Small Site for Rare Plant		

Core Habitat BM743

Plants

Common Name	Scientific Name	Status
Small Site for Rare Plant		

BioMap: Species and Natural Communities

Amherst

Core Habitat BM745

Natural Communities

Common Name	Scientific Name	Status
Black Gum-Pin Oak-Swamp White Oak "Perched" Swamp		Imperiled

Core Habitat BM746

Natural Communities

Common Name	Scientific Name	Status
Black Gum-Pin Oak-Swamp White Oak "Perched" Swamp		Imperiled

Core Habitat BM747

Natural Communities

Common Name	Scientific Name	Status
Black Gum-Pin Oak-Swamp White Oak "Perched" Swamp		Imperiled

Core Habitat BM784

Natural Communities

Common Name	Scientific Name	Status
Black Ash Swamp		Imperiled
Circumneutral Rocky Summit/Rock Outcrop Community		Imperiled
Hickory - Hop Hornbeam Forest/Woodland		Imperiled

Plants

Common Name	Scientific Name	Status
Drooping Speargrass	*Poa languida*	Endangered
Green Rock-Cress	*Arabis missouriensis*	Threatened
Linear-Leaved Milkweed	*Asclepias verticillata*	Threatened
Narrow-Leaved Vervain	*Verbena simplex*	Endangered

Red Mulberry	*Morus rubra*	Endangered
Violet Wood-Sorrel	*Oxalis violacea*	Endangered

Vertebrates

Common Name	Scientific Name	Status
Eastern Box Turtle	*Terrapene carolina*	Special Concern
Jefferson Salamander	*Ambystoma jeffersonianum*	Special Concern
Marbled Salamander	*Ambystoma opacum*	Threatened
Spotted Turtle	*Clemmys guttata*	Special Concern

Core Habitat BM785

Natural Communities

Common Name	Scientific Name	Status
Black Ash Swamp		Imperiled
Circumneutral Rocky Summit/Rock Outcrop Community		Imperiled
Circumneutral Talus Forest/Woodland		Vulnerable

Plants

Common Name	Scientific Name	Status
Glaucescent Sedge	*Carex glaucodea*	Endangered
Green Rock-Cress	*Arabis missouriensis*	Threatened
Linear-Leaved Milkweed	*Asclepias verticillata*	Threatened
Mountain Firmoss	*Huperzia selago*	Endangered
Purple Clematis	*Clematis occidentalis*	Special Concern
Red Mulberry	*Morus rubra*	Endangered
Sensitive Rare Plant		
Violet Wood-Sorrel	*Oxalis violacea*	Endangered

Invertebrates

Common Name	Scientific Name	Status
Orange Sallow Moth	*Rhodoecia aurantiago*	Threatened

Vertebrates

Common Name	Scientific Name	Status
Eastern Box Turtle	*Terrapene carolina*	Special Concern
Four-toed Salamander	*Hemidactylium scutatum*	Special Concern
Jefferson Salamander	*Ambystoma jeffersonianum*	Special Concern
Marbled Salamander	*Ambystoma opacum*	Threatened
Spotted Turtle	*Clemmys guttata*	Special Concern
Wood Turtle	*Clemmys insculpta*	Special Concern

Core Habitat BM787

Plants

Common Name	Scientific Name	Status
Small Site for Rare Plant		

Core Habitat BM659

This Core Habitat supports the largest known concentration of Eastern Spadefoot toads in the Connecticut River Valley. It also contains an unusual type of natural community, the Black Gum-Pin Oak-White Oak "Perched" Swamp, that is found only in this region of Massachusetts.

Natural Communities

This Core Habitat contains a high-quality, moderate-sized Black Gum-Pin Oak-Swamp White Oak "Perched" Swamp that is surrounded by both forested upland and agricultural fields. Black Gum-Pin Oak-Swamp White Oak "Perched" Swamps are an unusual type of wetland found in Massachusetts in one area of the Connecticut River Valley. This community type is dominated by Red Maple, with Black Gum, Pin Oak, and Swamp White Oak.

Vertebrates

This Core Habitat encompasses a complex of low-lying agricultural fields and patches of deciduous forest in Hadley and Sunderland that collectively support the largest known concentration of Eastern Spadefoot toads in the Connecticut River Valley. The toads occur in areas with sandy soils and breed in seasonally flooded pools, including depressions in agricultural fields. This Core Habitat also includes habitat along small streams, including Russellville, Mohawk, and Dry Brooks. The area is criss-crossed with roads and conservation planning efforts are needed here, as these habitats are already partially fragmented and are gradually being lost to residential development.

Core Habitat BM740

This Core Habitat is an important area for several rare plants and animals. It encompasses riparian habitats along portions of the Connecticut River, the Fort River, and Hop Brook, including extensive forested wetlands and small wet meadows in Lawrence Swamp. These areas support a diversity of rare dragonflies and plants, as well as Wood Turtles, Spotted Turtles, Four-toed Salamanders, and Bald Eagles. The Core Habitat also contains unusual wetland communities, including one that is specific to this part of the state. While some parts of this Core Habitat are protected, many riparian habitats appear to be unprotected.

Natural Communities

This Core Habitat contains large examples of both Major-River Floodplain Forest and Black Gum-Pin Oak-Swamp White Oak "Perched" Swamp natural communities. Major-River Floodplain Forests are dominated by Silver Maple. This community type is found along the floodplains of large rivers. The soils are enriched with nutrients brought by annual floods, resulting in a diversity of plants and insects. This floodplain forest is well-developed, with only a few exotic invasive plant species restricted to small sections where disturbances such as trails exist. This is the second-best known Major-River Floodplain Forest included on the BioMap. Meanwhile, Black Gum-Pin Oak-Swamp White Oak "Perched" Swamps are an unusual type of wetland found in Massachusetts in one area of the Connecticut River Valley. This community type is dominated by Red Maple, with Black Gum, Pin Oak, and Swamp White Oak.

Plants

Nine rare plant populations are found growing in different parts of this large Core Habitat. Several populations of the Climbing Fern, a plant Species of Special Concern, are found in swampy areas, while one population of the Threatened Green Dragon grows along a river floodplain. Other rare plant species found here are the Narrow-Leaved Spring Beauty (Endangered) and the Sandbar Willow (Threatened).

Invertebrates

In its westernmost portion, this Core Habitat includes a 5-km stretch of the Connecticut River and surrounding uplands in Northampton and Hadley that are critical habitat for rare dragonfly species, including the Endangered Riverine Clubtail dragonfly, the Threatened Arrow Clubtail dragonfly, and the Brook Snaketail dragonfly, a Species of Special Concern. Some portions of the shoreline habitat are within the protected areas such as the Rainbow Beach and Sheperds Island Conservation Areas and the Connecticut River Greenway and Skinner State Park. Pollution and hydrologic alterations originating upstream, downstream, or within this Core Habitat are major threats to the rare species inhabiting the area.

Vertebrates

The diverse riparian and wetland habitats within this Core Habitat support significant populations of Wood Turtles, Spotted Turtles, and Four-toed Salamanders. Wood Turtles may use over 13 connected miles of the Fort River and Hop Brook and associated wetlands, and range out 600 yards into forested and agricultural uplands. Lawrence Swamp is a large complex of forested and shrub wetlands, small wet meadows, and vernal pools that supports a significant population of Spotted Turtles. Four-toed Salamanders occur in pools and seeps where sphagnum moss is abundant. Conservation efforts should seek to maximize the width and extent of undeveloped riparian corridors along the Fort River and Hop Brook to ensure that the habitat quality of this Core Habitat does not get further degraded by roads and suburban development.

This Core Habitat also encompasses partially wooded shorelines and islands along a portion of the Connecticut River in Northampton. These areas provide relatively undisturbed perching habitat for wintering and non-breeding Bald Eagles that forage along the river, as well possible future nest sites for this species.

Core Habitat BM745

Natural Communities

This Core Habitat is part of a complex that contains small patches of high-quality Black Gum-Pin Oak-Swamp White Oak "Perched" Swamp. This rare natural community type is an unusual type of wetland found in Massachusetts in one area of the Connecticut River Valley where it occurs only on glacial lake sediments. Clay deposits in the glacial lake sediments form an essentially water-impermeable layer, separating the surface swamp waters from the regional ground water. This community type is dominated by Red Maple, with Black Gum, Pin Oak, and Swamp White Oak.

BioMap: Core Habitat Summaries

Amherst

Core Habitat BM746

Natural Communities

This Core Habitat is part of a complex that contains small patches of high-quality Black Gum-Pin Oak-Swamp White Oak "Perched" Swamp. This rare natural community type is an unusual type of wetland found in Massachusetts in one area of the Connecticut River Valley where it occurs only on glacial lake sediments. Clay deposits in the glacial lake sediments form an essentially water-impermeable layer, separating the surface swamp waters from the regional ground water. This community type is dominated by Red Maple, with Black Gum, Pin Oak, and Swamp White Oak.

Core Habitat BM747

Natural Communities

This Core Habitat is part of a complex that contains small patches of high-quality Black Gum-Pin Oak-Swamp White Oak "Perched" Swamp. This rare natural community type is an unusual type of wetland found in Massachusetts in one area of the Connecticut River Valley where it occurs only on glacial lake sediments. Clay deposits in the glacial lake sediments form an essentially water-impermeable layer, separating the surface swamp waters from the regional ground water. This community type is dominated by Red Maple, with Black Gum, Pin Oak, and Swamp White Oak.

Core Habitat BM784

This Core Habitat comprises the largely undeveloped eastern half of the Holyoke Range in Granby and Amherst, as well as riparian wetlands along Bachelor Brook and some of its tributaries in Granby and Belchertown. The Core Habitat supports rare species of reptiles and amphibians, and is an important site for Eastern Box Turtles in particular. The area contains interesting natural communities, such as a Hickory-Hop Hornbeam Forest, and supports an array of rare plant species, including the Endangered Violet Wood-Sorrel. Over half of the Core Habitat remains unprotected, including most of the eastern portions of the Holyoke Range and areas along Bachelor Brook.

Natural Communities

This Core Habitat contains the excellent, bald-like, rocky summits on Mount Norwottock in the Holyoke Range. The south-facing slopes of Mount Norwottock also support a high-quality Hickory-Hop Hornbeam Forest and a species-rich Black Ash Swamp. Hickory-Hop Hornbeam Forests are open, mixed hardwood forests dominated by various Hickory species and with significant Hop Hornbeam in the subcanopy. This community type is characterized by a sparse shrub layer, and a rich diversity of herbaceous flora. Meanwhile, Black Ash Swamps are a variant of Red Maple Swamps with Black Ash co-dominant in the canopy. The soils that support Black Ash Swamps are enriched with less acidic, more nutrient-rich groundwater seepage. Here both communities are all well-buffered within an extensive tract of forested land.

Plants

A diversity of upland rare plant species can be found in this part of the Holyoke Range, including the Violet Wood-Sorrel, a small herb found in the understory of rich forests, and Green Rock-Cress, a stiffly upright plant growing from a basal rosette on bluffs and ledges.

Vertebrates

This large, topographically diverse and largely forested Core Habitat provides significant habitat for Eastern Box Turtles. Because it remains mostly undeveloped and contains large roadless areas, this site may represent one of the best remaining opportunities for the preservation of viable populations of this species in the rapidly developing Connecticut River Valley. Significant habitat for Jefferson and Marbled Salamanders may be found in the seasonal pools near the base of slopes, and riparian wetlands along Bachelor Brook provide significant habitat for Spotted Turtles. Populations of Four-toed Salamanders and Wood Turtles may be present here as well. This area also provides important breeding and migration habitat for a variety of forest birds.

Core Habitat BM785

This Core Habitat comprises the western half of the Holyoke Range in Hadley and South Hadley, from Rte. 116 west toward the Connecticut River. This mainly roadless area, located in the rapidly developing Connecticut River Valley, provides important habitat for several species of state-protected rare amphibians and reptiles. It also contains oak woodlands that support the Threatened Orange Sallow moth, a variety of habitats that support several rare plant species, and a range of natural communities, from rocky summits to Black Ash Swamps. Half of the Core Habitat is protected as conservation land, and further protection of large and important areas is needed.

Natural Communities

This Core Habitat contains the excellent, bald-like, rocky summits on Bare Mountain and Mount Hitchcock in the Holyoke Range. It also contains a species-rich Circumneutral Talus Forest associated with one of the few known locations of a state Endangered plant species. Further down slope are some pockets of Black Ash Swamp, which is a variant of Red Maple Swamp with Black Ash co-dominant in the canopy. The soils that support Black Ash Swamps are enriched with less acidic, more nutrient-rich groundwater seepage.

Plants

A cluster of rare plant occurrences is found within this Core Habitat, including Red Mulberry (Endangered), Linear-Leaved Milkweed (Threatened), and Purple Clematis (Species of Special Concern).

BioMap: Core Habitat Summaries

Amherst

Invertebrates

This Core Habitat includes the open oak woodlands on the rocky summits and ridges of the Holyoke Range that are habitat for the Threatened Orange Sallow moth. This large area of habitat is undeveloped, unfragmented, and located in close proximity to other Core Habitat for the Orange Sallow moth within the Mount Tom State Reservation to the southwest. Although various tracts within this Core Habitat are protected land, including the Holyoke Range State Park, Skinner State Park, and municipal conservation land, conservation of remaining areas of unprotected land within this Core Habitat is desirable to increase the amount of contiguous protected habitat and to help ensure the long-term viability of the Orange Sallow moth and other rare species inhabiting the area.

Vertebrates

This Core Habitat is characterized by steep, rocky hillsides of deciduous and White Pine forests, with scattered seasonal pools, small brooks, seeps, and forested wetlands in valleys and on hillside terraces. It supports significant populations of Marbled, Four-toed, and Jefferson Salamanders, as well as Eastern Box Turtles. Because it includes a large roadless area, it likely represents one of the best remaining opportunities to preserve viable populations of these species in the Connecticut River Valley. Over two miles of Elmer Brook run along the base of the south slope of the Holyoke Range and provide habitat for Wood Turtles, although this species may have been impacted by road mortality along Pearl Street and Rte. 116. This Core Habitat also provides a large block of breeding and migration habitat within the Connecticut River Valley for a number of species of forest birds.

Living Waters: Species and Habitats

Amherst

Core Habitat LW110

Fishes

Common Name	Scientific Name	Status
Bridle Shiner	*Notropis bifrenatus*	Special Concern

Core Habitat LW426

Exemplary Habitats

Common Name	Scientific Name	Status
Invertebrate Habitat		----------

Invertebrates

Common Name	Scientific Name	Status
Creeper	*Strophitus undulatus*	Special Concern
Dwarf Wedgemussel	*Alasmidonta heterodon*	Endangered
Eastern Pearlshell	*Margaritifera margaritifera*	----------
Eastern Pondmussel	*Ligumia nasuta*	Special Concern
Triangle Floater	*Alasmidonta undulata*	Special Concern

Fishes

Common Name	Scientific Name	Status
Bridle Shiner	*Notropis bifrenatus*	Special Concern
Burbot	*Lota lota*	Special Concern

Living Waters: Core Habitat Summaries

Amherst

Core Habitat LW110

This Core Habitat supports one of six known populations of Bridle Shiner in the Connecticut Watershed. This fish Species of Special Concern has a small range from southern New England to South Carolina, and has been declining or extirpated in much of the region. The Bridle Shiner is typically found in well-vegetated, quiet waters. It feeds on small aquatic insects and other invertebrates, and is an important part of the freshwater ecosystem as prey for larger fishes. The Bridle Shiner population in this pond has persisted at least since 1952.

Core Habitat LW426

The Fort River, as it flows from Amherst into Hadley to join the Connecticut River, is a key freshwater habitat for fishes, freshwater mussels, and aquatic insects.

The predominantly sandy riverbed and the combination of riffles and pools along the Fort River provide important habitats for a diverse group of freshwater mussels, with seven of the state's twelve species found here. Several specimens of the federally and state-Endangered Dwarf Wedgemussel were recently rediscovered in the river. The Triangle Floater occurs in good numbers and is distributed throughout the river, whereas the Eastern Pondmussel is found less frequently in sandy pools or quieter waters. The uncommon Eastern Pearlshell is abundant and very well-distributed throughout the river, and is an indicator of cool, clean rivers that support its trout fish hosts. While some mussel populations are abundant here, many of the state-listed rare species appear to be declining. Permanent protection of the undeveloped riparian areas adjacent to this Core Habitat and the control of sediment inputs from roads and agricultural areas are first steps toward protecting this valuable freshwater habitat.

This Core Habitat also provides habitat for rare dragonflies. These aquatic insects are good indicators of ecosystem health, confirming that these freshwater habitats are important for other aquatic species as well. For example, a section of the Fort River in Hadley supports one of six known populations of Bridle Shiner in the Connecticut Watershed. This fish Species of Special Concern has a small range from southern New England to South Carolina, and has been declining or extirpated in much of the region. The Bridle Shiner is typically found in well-vegetated, quiet waters. It feeds on small aquatic insects and other invertebrates, and is an important part of the freshwater ecosystem as prey for larger fishes.

The lower reaches of the Fort River and into the Connecticut River are presumed habitat for Burbot, another fish Species of Special Concern. Burbot is a freshwater member of the cod family, and has been found at only a few locations in Massachusetts. Not much is known about its life history in the state, as this species remains an enigma to biologists.

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